CLAIMS:

1.   A dynamic memory buffer (30, 210) for buffering between one or more
software applications (40) executing on computing means and one or more data generating
and/or receiving devices (20) in communication through the buffer (30, 210) to the one or
more applications (40), the buffer (30, 210) including buffer managing means (210) for
5   controlling allocation of one or more portions of the buffer (30) to the one or more
applications (40) so as to reduce power dissipation occurring within the one or more devices
(20).

2.   A buffer (30, 210) according to Claim 1, wherein the managing means (210)
10   are operable to control allocation of said one or more portions of the buffer (30) in response
to data streaming rate demands placed upon the buffer (30) by said one or more applications
(40).

3.   A buffer (30, 210) according to Claim 1 or 2, wherein the managing means
15   (210) are operable to control allocation of said one or more portions of the buffer (30) in
response to approaching a maximum permissible power dissipation limit for the one or more
devices (20).

4.   A buffer (30, 210) according to Claim 1 or 2, wherein the managing means
20   (210) are operable to control allocation of said one or more portions of the buffer (30) in
response to multiple fractional power dissipation in the one or more devices (20), said
fractional power dissipation being proportional to corresponding potential asymptotic power
dissipation arising for one or more of the applications (40) associated with substantially
unlimited buffer (30) memory capacity.
25
5.   A buffer (30, 210) according to Claim 4, wherein the multiple fractional power
dissipation is within a range of 105% to 300% of corresponding potential asymptotic power
dissipation.

6.   A buffer (30, 210) according to Claim 5, wherein the multiple fractional power dissipation is substantially 110% of corresponding potential asymptotic power dissipation.

7.   A buffer (30, 210) according to Claim 1 or 2, wherein the managing means (210) are implemented as a neural network operable to iteratively reduce power dissipation arising within the one or more devices by deriving a measure of power dissipated in the one or more devices (20) and using said measure to control allocation of the one or more portions of the buffer (30).

8.   A buffer (30, 210) according to any one of the preceding claims, wherein the computing means, the buffer (30) and the one or more devices (20) when operating in conjunction with the one or more software applications (40) executing on the computing means correspond to a multi-application resource-limited system.

9.   A buffer (30, 210) according to any one of the preceding claims, wherein the managing means (210) are implemented in software executable on at least one of the computing means and said one or more devices (20).

10.   A buffer (30, 210) according to Claim 9, wherein predetermined data arrays are included in the managing means (210) for use in allocating one or more portions of the buffer (30) to said one or more applications (40) in response to data rate demanded from the one or more applications (40) and/or predetermined power dissipation limits for the one or more devices (20).

11.   A buffer (30, 210) according to any one of the preceding claims, wherein at least part of the buffer (30) comprises an electronic shock protection (ESP) buffer.

12.   A buffer (30, 210) according to any one of the preceding claims, wherein at least one of the devices (20) is arranged to operate in a stop-start switched duty cycle mode when streaming data.

13.   A method of controlling a dynamic memory buffer (30, 210) for buffering between one or more software applications (40) executing on computing means and one or more data generating and/or receiving devices (20) in communication through the buffer (30,

18

210) to the one or more applications (40), the method including the step of arranging for the buffer (30, 210) to include buffer managing means (210) for controlling allocation of one or more portions of the buffer (30) to the one or more applications (40) so as to reduce power dissipation occurring within the one or more devices (20).

14.   A method according to Claim 13, wherein the managing means (210) are operable to control allocation of said one or more portions of the buffer (30) in response to data streaming rate demands placed upon the buffer (30) by said one or more applications (40).

15.   A method according to Claim 13 or 14, wherein the managing means (210) are operable to control allocation of said one or more portions of the buffer (30) in response to approaching a maximum permissible power dissipation limit for the one or more devices (20).

16.   A method according to Claim 13 or 14, wherein the managing means (210) are operable to control allocation of said one or more portions of the buffer (30) in response to multiple fractional power dissipation in the one or more devices (20), said multiple fractional power dissipation being proportional to corresponding potential asymptotic power dissipation arising for one or more of the applications (40) arising for substantially unlimited buffer (30) memory capacity.

17.   A method according to Claim 16, wherein the multiple fractional power dissipation is within a range of 105% to 300% of corresponding potential asymptotic power dissipation.

18.   A method according to Claim 17, wherein the multiple fractional power dissipation is substantially 110% of corresponding potential asymptotic power dissipation.

19.   A method according to Claim 13 or 14, wherein the managing means (210) are implemented as a neural network operable to iteratively reduce power dissipation arising within the one or more devices by deriving a measure of power dissipated in the one or more devices (20) and using said measure to control allocation of the one or more portions of the buffer (30).

20.   A method according to any one of Claims 13 to 19, wherein the computing
means, the buffer (30) and the one or more devices (20) when operating in conjunction with
the one or more software applications (40) executing on the computing means correspond to
a multi-application resource-limited system.

21.   A method according to any one of Claims 13 to 20, wherein the managing
means (210) are implemented in software executable on at least one of the computing means
and said one or more devices (20).

22.   A method according to Claim 21, wherein predetermined data arrays are
included in the managing means (210) for use in allocating one or more portions of the buffer
(30) to said one or more applications (40) in response to data rate demanded from the one or
more applications (40) and/or predetermined power dissipation limits for the one or more
devices (20).

23.   A method according to any one of Claims 13 to 22, wherein at least part of the
buffer (30) comprises an electronic shock protection (ESP) buffer.

24.   A method according to any one of Claims 13 to 23, wherein at least one of the
devices (20) is arranged to operate in a stop-start switched duty cycle mode when streaming
data.